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# DigitalCommons@USU

9-14-2016

# Creating a Culture of Compliance at Utah State University

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*Utah State University*

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# Creating a Culture of Compliance at Utah State University

Jeff Broadbent, *Associate Vice President for Research and Associate Dean for Graduate Studies*
Betty Rozum, *Data Services Coordinator*

Utah State University

# The Issues & Background

- OSTP Memorandum, February 22, 2013:
    - *Digitally formatted scientific data resulting from unclassified research supported wholly or in part by Federal funding should be stored and publicly accessible to search, retrieve, and analyze.*

# Why Is This So Important?

- Concerns from the University's perspective:
  - No "expiration date" for public access to data
  - Must provide access to content without charge
  - Mandate is largely unfunded
  - Subject to audit
  - Real consequences for non-compliance

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# Utah State University Response

- Assembled 16 member Data Task Force with representation from:
  - Library
  - Office of Research and Graduate Studies
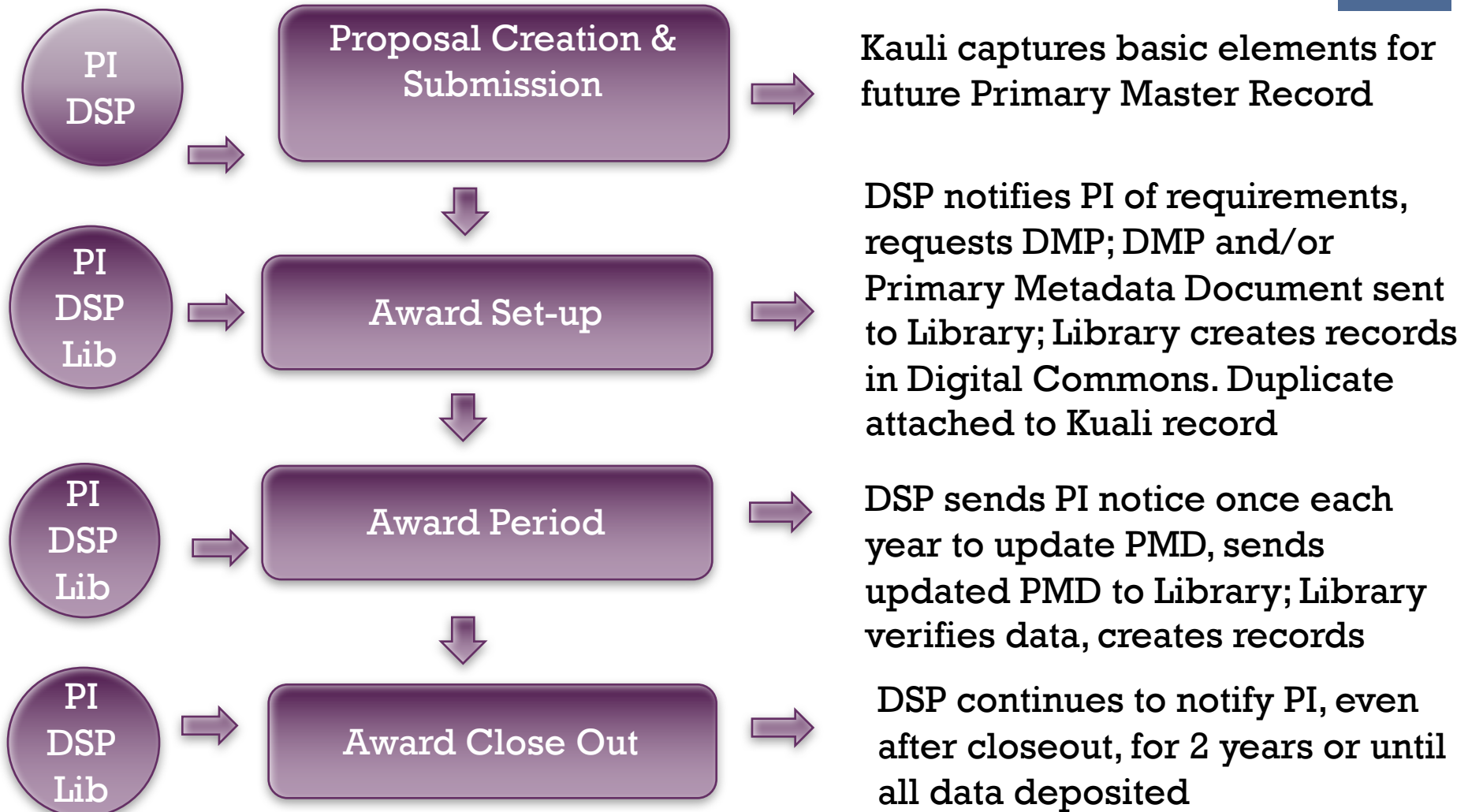  - Information Technology

# Open Access Working Group

- Smaller group that met regularly
  - Library
    - Data Services Coordinator
    - Metadata Specialist
  - Office of Research and Graduate Studies
    - Associate VPR
    - Research Development Director
    - Sponsored Programs Director
    - Programmer

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# USU Solution Leverages Core Institutional Resources

- Kuali: an electronic award management system; USU's official record for Sponsored Programs

- DigitalCommons@USU: USU's official institutional repository

- USU's Integrated Library System: Sierra

| | | |
|---|---|---|
| **PI DSP** | **Proposal Creation & Submission** | Kauli captures basic elements for future Primary Master Record |
| **PI DSP Lib** | **Award Set-up** | DSP notifies PI of requirements, requests DMP; DMP and/or Primary Metadata Document sent to Library; Library creates records in Digital Commons. Duplicate attached to Kuali record |
| **PI DSP Lib** | **Award Period** | DSP sends PI notice once each year to update PMD, sends updated PMD to Library; Library verifies data, creates records |
| **PI DSP Lib** | **Award Close Out** | DSP continues to notify PI, even after closeout, for 2 years or until all data deposited |

# Records the Library Creates

- Digital Commons:
  - Master Record – represents the PI's Grant
    - Includes the DMP, if allowed
    - Includes the "Primary Metadata Document"
  - Dataset records
    - Metadata only
    - Metadata plus data files
  - Metadata records for publications

- ILS:
  - Dataset Records

# Master Record

Represents PI's Grant

Includes:

- DMP (available through the "Download Link")

- Primary Metadata Document (available through "Additional Files")

# Primary Metadata Document

- Created by Sponsored Programs from Kuali data then populated by PI

- Updates requested every year

- Used for
  - Setting up initial Master Record in Digital Commons
  - Verifying and creating records for data deposits
  - Adding agency sponsor information to publication records in Digital Commons

| Constant Data (from Kuali) | |
|---|---|
| 1st Author/Researcher listed | Jeff Broadbent |
| Title/Name assigned to grant | Characterizing Stress Responses of Industrial Strains of Bifidobacteria and Their Use for Extending the Survival of Bifidobacteria in Foods |
| Place where data originated | Logan, UT |
| Primary institution name | Utah State University |
| Project start and stop dates | Sep 1 2006-Aug 31, 2010 |
| Granting Agency, grant award number | USDA 2006-35503-17194 |
| Subject of research data | food products, bacteria, quality maintenance in soring and marketing food products, bifdobacterium, probiotic, stress response |
| | |
| Agency Progress and Final Report Location (URL) | http://www.reeis.usda.gov/web/crisprojectpages/0206831-characterizing-stress-responses-of-industrial-strains-of-bifidobacteria-and-their-use-for-extending-the-survival-of-bifidobacteria-in-foods.html |
| Publications | |
| Publication Citations (repeatable) | Oberg, T. S., Steele, J. L., Ingham, S. C., Smeianov, V. V., Briczinski, E. P., Abdalla, A., & Broadbent, J. R. (2011). Intrinsic and inducible resistance to hydrogen peroxide in Bifidobacterium species. Journal of Industrial Microbiology & Biotechnology, 38(12), 1947–1953. http://doi.org/10.1007/s10295-011-0983-y |
| | Oberg, T. S., Ward, R. E., Steele, J. L., & Broadbent, J. R. (2015). Transcriptome analysis of Bifidobacterium longum strains that show a differential response to hydrogen peroxide stress. Journal of Biotechnology, 212, 58–64. http://doi.org/10.1016/j.jbiotec.2015.06.405 |
| Data Deposits (or Other Associated Data) | |
| Title/Name assigned to data set | Expression data from Bifidobacterium longum strains exposed to hydrogen peroxide stress |
| Description (100 word limit) | Stress survival tactics in bacteria utilize the up- and down-regulation of stress response genes. In bacterial that lack classical stress response genes for oxidative stress, other…. |
| URL or DOI for location of dataset | http://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE44709 |
| Year of publication/deposit | 2013 |
| File type (ex. Txt,XML,PDF) | TXT, XML |
| Is a special program or software needed to access this data ? If yes what is it? | |
| Link to associated Journal Article (repeatable) | http://doi.org/10.1016/j.jbiotec.2015.06.405 |

# Dataset Record

- Location of datasets verified

- Metadata records created

- Link to dataset provided

## Transcriptional Responses of Bifidobacterium longum Strains to Hydrogen Peroxide Stress

**Link to Full Text**

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**Taylor S. Oberg**, *Utah State University*      **Follow**
**Jeff R. Broadbent**, *Utah State University*
**Robert E. Ward**, *Utah State University*
**James L. Steele**, *University of Wisconsin-Madison*

**Document Type**
Dataset

**Publisher**
GenBank

**Publication Date**
Spring 5-13-2013

**Grant Number**
USDA 2006-35503-17194

**Funders**
USDA Cooperative State Research, Education, and Extension Service Improving Food Quality and Value Program National Research Initiative

**Related Content**
Citation for associated article: Oberg, T. S., Ward, R. E., Steele, J. L., & Broadbent, J. R. (2015). Transcriptome analysis of Bifidobacterium longum strains that show a differential response to hydrogen peroxide stress. Journal Of Biotechnology, 21258-64. doi:10.1016/j.jbiotec.2015.06.405

Sequence data available here: http://www.ncbi.nlm.nih.gov/nuccore/?term=AQGL01000001:AQGL01000013[accn]

**DOI**
doi:10.1016/j.jbiotec.2015.06.405

**Abstract**
Bifidobacterium longum D2957, whole genome shotgun sequencing project.

**Language**
eng

**Comments**
This entry is the master record for a whole genome shotgun sequencing project and contains no sequence data. See related content for link to sequence data.
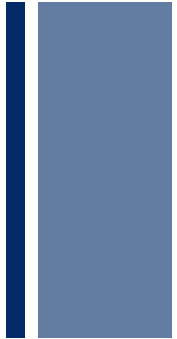
**Recommended Citation**
Oberg, Taylor S.; Broadbent, Jeff R.; Ward, Robert E.; and Steele, James L., "Transcriptional Responses of Bifidobacterium longum Strains to Hydrogen Peroxide Stress" (2013). *Browse all Datasets*. Paper 15.
http://digitalcommons.usu.edu/all_datasets/15

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# Online Catalog Record

**Author** Oberg, Taylor S., researcher.

**Title** Transcriptional Responses of Bifidobacterium longum Strains to Hydrogen Peroxide Stress / T. S. Oberg, J. R. Broadbent, R. E. Ward, J. L. Steele.

**Publication Info.** Logan, Utah: Utah State University, 2013.
Bethesda, Maryland: National Center for Biotechnology, PubMed Central/GenBank Database, 2013.

Connect to

Dataset deposited here
Additional sequence data available here
Link to associated article
Article DOI

**Description** 1 dataset.

**Content** computer dataset

**Carrier** online resource

**Note** Citation for associated article: Oberg, T. S., Ward, R. E., Steele, J. L., & Broadbent, J. R. (2015). Transcriptome analysis of Bifidobacterium longum strains that show a differential response to hydrogen peroxide stress. Journal Of Biotechnology, 21258-64. doi:10.1016/j.jbiotec.2015.06.405.
This entry is the master record for a whole genome shotgun sequencing project and contains no sequence data. See additional links below for access to full sequence data.
The Bifidobacterium longum D2957 whole genome shotgun (WGS) project has the project accession AQGL00000000. This version of the project (01) has the accession number AQGL01000000, and consists of sequences AQGL01000001-AQGL01000013.

**Summary** Bifidobacterium longum D2957, whole genome shotgun sequencing project.

**Local Note** USU Data Deposits.
Department: Nutrition, Diatetics and Food Sciences.

**Funding** USDA Cooperative State Research, Education, and Extension Service Improving Food Quality and Value Program National Research Initiative Grant 2006-35503-17194.

**Subject** Genomics.

**Added Author** Broadbent, Jeff R., researcher.
Ward, Robert E., researcher.
Steele, James L., researcher.

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# Publications

- Create record if none exists

- Add funder information to existing records;

- Add URL from agency repository

Identification of plasmalogens in the cytoplasmic membrane of *Bifidobacterium animalis* subsp. *Lactis*

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T. S. Oberg

R. E. Ward

J. L. Steele

Jeffery R. Broadbent, *Utah State University*   **Follow**

**Document Type**
Article

**Journal/Book Title/Conference**
Applied and Environmental Microbiology

**Volume**
78

**Issue**
3

**Publisher**
American Society of Microbiology

**Publication Date**
2012

**Funding Agency**
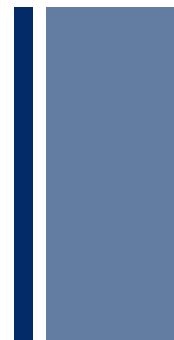USDA 2006-35503-17194

**First Page**
880

**Last Page**
884

# Library Work Flow & Staffing Resources

- Creation of "Master Record" – including adding DMP and PMD and PMD revisions
  - Student Assistant

- Verification of data links and creation of dataset records
  - Student Assistant **

- Creation and/or editing of publication records, including verification of deposit in agency repository
  - Student Assistant **

- Creation of ILS records for data
  - Student assistant
    - (** problems addressed by supervisor)

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# Benefits for University

- Verifiable compliance

- Capture the location of data while it's (relatively) fresh in the mind of researchers
  - Opportunity to "rescue" data insecurely stored

- Create permanent records of data

- Increase discoverability of data

- Reporting functions help University to understand and analyze research data creation and lifecycles

- Sharing successful DMPs = writing better future DMPs

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# Benefits for Library
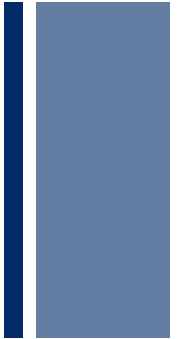
- Increases value on campus, strengthens partnership with Research Office

- Increases interactions with faculty and demonstrates value by securing data and helping faculty comply with DMP

- Gains opportunity to help faculty learn about better options for data deposit

- Develops cross campus synergistic relationships

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# Assessment

- Library will assess:
  - Staff time (current and projected future), costs to library
  - Stakeholder satisfaction with workflow & services
  - Change in quality of Data Management Plans (DMPs)

# Summary

- Project Goal
  - Create a audit system that efficiently tracks data and publication deposits resulting from federally funded research with as little impact as possible on staffing of any group involved (PI, Research Office, Library)

- Library – most of the work will be handled by student employees

- Going live Fall 2016

- Developing benchmarks to define success or identify areas for improvement

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